

WHAT IS CLAIMED IS:

1. A water-soluble or water-dispersible polyurethane comprising a reaction product of

- A) a mixture of at least one polyether polyol a1) having an average functionality of ≥ 3 and at least one urethane group-containing polyether polyol a2) having an average functionality of ≥ 4 ,
- B) at least one monoisocyanate having 8 to 22 carbon atoms,
- C) at least one (cyclo)aliphatic and/or aromatic diisocyanate,
- D) optionally at least one monoalcohol having 8 to 22 carbon atoms, and
- F) optionally at least one polyisocyanate having an average functionality of > 2

wherein the starting NCO/OH equivalent ratio is between 0.5:1 to 1.2:1.

2. The polyurethane of claim 1 wherein polyether polyol a1) has an average functionality of 3.

3. The polyurethane of claim 1 wherein polyether polyol a1) has an average functionality of 4 to 6.

4. The polyurethane of claim 1 wherein monoisocyanate B) has 10 to 18 carbon atoms.

5. The polyurethane of claim 1 wherein monoisocyanate B) has 12 to 18 carbon atoms.

6. The polyurethane of claim 1 wherein diisocyanate C) is a (cyclo)aliphatic diisocyanate.

7. The polyurethane of claim 1 wherein monoalcohol D) contains 10 to 18 carbon atoms.

8. A process for the production of a water-soluble or water-dispersible polyurethane comprising reacting

- A) a mixture of at least one polyether polyol a1) having an average functionality of ≥ 3 and at least one urethane group-containing polyether polyol a2) having an average functionality of ≥ 4 ,

- B) at least one monoisocyanate with 8 to 22 carbon atoms,
- C) at least one (cyclo)aliphatic and/or aromatic diisocyanate,
- D) optionally at least one monoalcohol with 8 to 22 carbon atoms, and
- E) optionally at least one polyisocyanate having a mean functionality of > 2

5

wherein the starting NCO/OH equivalent ratio is between 0.5:1 to 1.2:1..

9. The process of claim 8 wherein the urethane group-containing polyether polyol a2) is produced by partial reaction of the polyether polyol a1) with a diisocyanate.

10

10. The process of claim 8 wherein the urethane group-containing polyether polyol a2) is produced by partial reaction of the polyether polyol a1) with polyisocyanates having an average functionality of ≥ 2 .

15

11. A composition of matter comprising the polyurethane of claim 1.

12. The composition of claim 11, wherein the composition is a thickened aqueous paint system, an adhesive or another aqueous formulation.